

REMARKS

This is a full and timely response to the non-final Office Action mailed December 22, 2003. Claims 1 – 31 remain pending. Reconsideration and allowance of the application and presently pending claims are respectfully requested.

I. Allowable Subject Matter

Applicants greatly appreciate the Examiner's statement in the previous Office Action that claims 5, 20, and 29 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

II. The Title of the Invention is Descriptive

The Office Action objects to the title as allegedly "not descriptive." The title has been amended according to the title suggested in the Office Action. Thus, Applicants submit that the amended title is clearly indicative of the invention to which the claims are directed and request that the objection be withdrawn.

III. Drawing Objections

The drawings have been objected to under 37 C.F.R. § 1.83(a) for allegedly not showing every feature of the invention specified in the claims. Specifically, the Office Action alleges that "the 'image-capturing device configured as a pendent and a pin' (claim 5) must be shown or the feature(s) canceled from the claim(s)." (Office Action, page 2).

The identified regulation, 37 C.F.R. § 1.83(a), states that “conventional features disclosed in the description and claims, where the detailed illustration is not essential for a proper understanding of the invention, should be illustrated in a drawing in the form of a graphical drawing symbol or labeled representation (e.g., a labeled rectangular box).”

(*See also*, MPEP § 608.02(d)). The present application has complied with this requirement by illustrating the pendent as element 214 of FIG. 2 and element 306 of FIG.

3. Applicants submit that a pin and a pendant are both conventional features, and therefore, a detailed illustration of a pin or a pendant is not essential for proper understanding of the invention.

Further, Applicants note that numerous patents are issued without any drawings. Thus, 37 C.F.R. § 1.83(a), brought to Applicants’ attention in the pending Office Action, is not an absolute mandate. For the reasons set forth above, no drawing amendments, or new drawings, are believed to be required in the present application. Accordingly, it is respectfully requested that the objection to the drawings be withdrawn.

IV. Claims 4, 11 – 15, 19, and 28 Comply with 35 U.S.C. §112, First Paragraph

The Office Action rejects claims 4, 11 – 15, 19, and 28 under 35 U.S.C. §112, first paragraph, as allegedly failing to comply with the enablement requirement. Specifically, the Office Action alleges that “the claims recite an image-capturing system capable of monitoring certain conditions of the user without disclosing (in the specification or the drawings) the way in which such conditions are identified.” Further, the Office Action alleges “the specification is silent as to the procedure, algorithms,

protocol, etc., etc. [sic] used by the claimed invention to perform the functions recited by the claims.” (Office Action, page 3).

Applicants respectfully submit that claims 4, 11 – 15, 19, and 28 comply with the enablement requirement. Specifically, the specification recites that “the processor 112 can use hidden Markov models (HMMs) to process the data to send commands that control various electrical devices 111.” (Page 7, line 30 – page 8, line 1). Further, the specification also recites that “the processor 112 implements an algorithm such as a nearest neighbor algorithm to recognize the control gestures.” (Page 9, lines 13 – 14). Additional details describing the nearest neighbor algorithm are given in the specification (e.g., page 9, lines 13 – 31). The specification also describes how the system can “monitor various conditions of the user.” (Page 11, lines 20 – 21). Even further detail as to *how* the invention performs the functions recited by the claims can be found at page 11, line 20 – page 12, line 9; and page 13, line 28 – page 14, line 14, for example. Accordingly, Applicants respectfully submit that the §112 rejection of claims 4, 11 – 15, 19, and 28 is misplaced and request that the rejection be withdrawn.

V. Claims 1 – 4, 6 – 19, 21 – 28, 30, and 31 are Patentable Over *Marrin*

The Office Action rejects claims 1 – 4, 6 – 19, 21 – 28, 30, and 31 under 35 U.S.C. §103(a) as allegedly unpatentable over U.S. Patent No. 5,875,257 to *Marrin, et al.* (“*Marrin*”). For the reasons set forth below, the rejections should be withdrawn and the claims allowed. However, prior to providing detailed deficiencies of the rejections, a brief discussion of the *Marrin* reference is offered.

Discussion of Marrin

Marrin is directed to a “hand-held means for continuously sensing at least tempo and emphasis.” (Abstract). Accordingly, *Marrin* discloses a “hand held means” that is substituted for the familiar baton held by a musical conductor. (See col. 2, lines 17-32). “The invention utilizes an emitter-detector system to track a three-dimensional location, and an accelerometer array to enhance the accuracy of tracking” of the hand held means (e.g., a baton). (Col. 2, lines 59 – 62).

As to the emitter-detector system, “the baton itself may contain a light-emitting diode (LED) whose output is tracked by a pair of detectors spatially opposed to (and generally facing) the user.” (Col. 2, lines 62 – 65). “The LED 215 effectively emits a point of light from front face 114, and PSD 224 detects the two-dimensional position of front face 114 and the intensity of light emitted therefrom.” (Col. 5, lines 61 – 63). Thus, the three-dimensional position of the baton itself is tracked by the external PSD.

Accordingly, there exists a fundamental difference between the baton of *Marrin* and the image-capturing system and method of claims 1 – 4, 6 – 19, 21 – 28, 30 and 31. That is, *Marrin* is directed to tracking the movement of the device itself (e.g., a baton) rather than an external object (e.g. a hand, a finger, a paw, etc.). In contrast, for example, the image-capturing system of claim 1 uses a processor that “forms one or more images due to a light that is reflected from the object” and “analyzes motion of the object,” wherein the object is, for example, a hand, a finger, a paw, etc. Additionally, independent claims 16 and 25 include a step of, or a means for, “processing data that corresponds to the one or more images of the object.” Thus, the teachings of *Marrin* and the systems and

methods of the claimed device are highly divergent. It is this fundamental difference which highlights the deficiencies of the rejection.

Independent Claim 1

Applicants submit that independent claim 1 is patentable for at least the reason that the proposed combination of *Marrin* in view of the knowledge of one skilled in the art does not expressly disclose, teach, or suggest at least the feature of “*an image-forming device that forms one or more images due to a light that is reflected from the object*” as recited in claim 1.

Unlike the image-capturing system of independent claim 1, *Marrin* discloses, at most, “the LED 215 effectively emits a point of light from front face 114, and PSD 224 detects the two-dimensional position of front face 114 and the intensity of light emitted therefrom.” (Col. 5, lines 61 – 63). The Office Action apparently alleges that the claimed “object” corresponds to the PSD 224. (Office Action, page 3). However, *Marrin* does not disclose any device “that forms one or more images due to a light that is *reflected from the object*” as recited in independent claim 1. Therefore, *Marrin* clearly does not teach, suggest, or disclose “an image forming device that forms one or more images due to a light that is reflected from the object” as recited in independent claim 1

Furthermore, Applicants believe that one skilled in the art would not know (and the Office Action does not allege) the element of “an image forming device that forms one or more images due to a light that is reflected from the object” as recited in claim 1. Thus, the proposed combination of *Marrin* and the alleged knowledge of one skilled in the art

fails to establish a *prima facie* case of obviousness, and the rejection of claim 1 should be withdrawn for at least this reason alone.

Additionally, as a separate and independent basis for patentability, *Marrin* does not teach, suggest, or disclose “*a processor that analyzes motion of the object*” as recited in independent claim 1. *Marrin* discloses, at most, that “the LED 215 effectively emits a point of light from front face 114, and PSD 224 detects the two-dimensional *position of front face 114* and the intensity of light emitted therefrom.” (*Emphasis added*, Col. 5, lines 61 – 63). Nowhere does *Marrin* teach “*a processor that analyzes motion of the object*.” Thus, *Marrin* simply does not teach, suggest, or disclose “*a processor that analyzes motion of the object*.”

Furthermore, Applicants believe that one skilled in the art would not know (and the Office Action does not allege) the element of “*a processor that analyzes motion of the object*” as recited in claim 1. Thus, the proposed combination of *Marrin* and the alleged knowledge of one skilled in the art fails to establish a *prima facie* case of obviousness, and the rejection of claim 1 should be withdrawn for at least this reason alone.

Claim 1 also recites that “the image forming device is configured to be portable.” However, as to this limitation, the Office Action alleges “it would have been obvious to one of ordinary skill in the art at the time the invention was made to *Marrin, et al.*, since it has been held that making a device portable or movable without producing any new modification and function or manufacture involves only ordinary skill in the art.” (Office Action, page 5). Without acquiescing to this argument, Applicants submit that claim 1 is patentable for reasons other than the alleged obviousness of the portability.

Accordingly, Applicants respectfully submit that independent claim 1 is allowable over the proposed combination of *Marrin* and the knowledge of one skilled in the art, and furthermore, that dependent claims 2 – 15 are allowable for at least the reason that they depend from allowable independent claim 1.

Independent Claim 16

Applicants submit that independent claim 16 is patentable for at least the reason that the proposed combination of *Marrin* in view of the knowledge of one skilled in the art does not expressly disclose, teach, or suggest at least the step of “*forming one or more images of the object due to a light reflected from the object*” as recited in claim 16.

Unlike the image-capturing system of independent claim 16, *Marrin* discloses, at most, “the LED 215 effectively emits a point of light from front face 114, and PSD 224 detects the two-dimensional position of front face 114 and the intensity of light emitted therefrom. (Col. 5, lines 61 – 63). The Office Action apparently alleges that the claimed “object” corresponds to the PSD 224. (Office Action, page 3). However, *Marrin* does not disclose any device for “forming one or more images *of the object* due to a light *reflected from the object*” as recited in independent claim 16. Therefore, *Marrin* clearly does not teach, suggest, or disclose “forming one or more images of the object due to a light reflected from the object” as recited in independent claim 16.

Furthermore, Applicants believe that one skilled in the art would not know (and the Office Action does not allege) the step of “forming one or more images of the object due to a light reflected from the object” as recited in claim 16. Thus, the proposed combination of *Marrin* and the alleged knowledge of one skilled in the art fails to establish a *prima facie*

case of obviousness, and the rejection of claim 16 should be withdrawn for at least this reason alone.

Additionally, as a separate and independent reason for patentability, claim 16, requires “*processing data that corresponds to the one or more images of the object.*” However, *Marrin* discloses, at most, “the LED 215 effectively emits a point of light from front face 114, and PSD 224 detects the two-dimensional position of front face 114 and the intensity of light emitted therefrom.” (Col. 5, lines 61 – 63). Nowhere does *Marrin* teach “data that corresponds to the one or more *images of the object*” or the “processing” thereof. Thus, *Marrin* simply does not teach, suggest, or disclose “processing data that corresponds to the one or more images of the object.”

Furthermore, Applicants believe that one skilled in the art would not know (and the Office Action does not allege) the step of “processing data that corresponds to the one or more images of the object” as recited in claim 16. Thus, the proposed combination of *Marrin* and the alleged knowledge of one skilled in the art fails to establish a *prima facie* case of obviousness, and the rejection of claim 16 should be withdrawn for at least this reason alone.

Claim 16 also recites that the step of processing data that corresponds to one or more images of the object is performed by a “light-emitting device that is configured to be portable” and the step of forming the one or more images of the object is performed by an “image-forming device that is configured to be portable.” However, as to these limitations, the Office Action alleges “it would have been obvious to one of ordinary skill in the art at the time the invention was made to *Marrin, et al.*, since it has been held that making a device portable or movable without producing any new modification and

function or manufacture involves only ordinary skill in the art.” (Office Action, page 5).

Without acquiescing to this argument, Applicants submit that claim 16 is patentable for reasons other than the alleged obviousness of the portability.

Accordingly, Applicants respectfully submit that independent claim 16 is allowable over the proposed combination of *Marrin* and the knowledge of one skilled in the art, and furthermore, that dependent claims 17-24 are allowable for at least the reason that they depend from allowable independent claim 16.

Independent Claim 25

Applicants submit that independent claim 25 is patentable for at least the reason that the proposed combination of *Marrin* in view of the knowledge of one skilled in the art does not expressly disclose, teach, or suggest at least a “*means for forming one or more images of the object due to a light reflected from the object*” as recited in claim 25.

Unlike the image-capturing system of independent claim 25, *Marrin* discloses, at most, “the LED 215 effectively emits a point of light from front face 114, and PSD 224 detects the two-dimensional position of front face 114 and the intensity of light emitted therefrom. (Col. 5, lines 61 – 63). The Office Action apparently alleges that the claimed “object” corresponds to the PSD 224. (Office Action, page 3). However, *Marrin* does not disclose any device for “forming one or more images of the object due to a light reflected from the object” as recited in independent claim 25. Therefore, *Marrin* clearly does not teach, suggest, or disclose at least a “means for forming one or more images of the object due to a light reflected from the object” as recited in independent claim 25.

Furthermore, Applicants believe that one skilled in the art would not know (and the Office Action does not allege) the element of a “means for forming one or more images of the object due to a light that is reflected from the object” as recited in claim 25. Thus, the proposed combination of *Marrin* and the alleged knowledge of one skilled in the art fails to establish a *prima facie* case of obviousness, and the rejection of claim 25 should be withdrawn for at least this reason alone.

Additionally, as a separate and independent reason for patentability, claim 25, requires a “means for processing data that corresponds to the one or more *images of the object*.” However, *Marrin* discloses, at most, “the LED 215 effectively emits a point of light from front face 114, and PSD 224 detects the two-dimensional position of front face 114 and the intensity of light emitted therefrom.” (Col. 5, lines 61 – 63). Nowhere does *Marrin* teach “data that corresponds to the one or more images of the object” or the “processing” thereof. Thus, *Marrin* simply does not teach, suggest, or disclose a “means for processing data that corresponds to the one or more *images of the object*.”

Furthermore, Applicants believe that one skilled in the art would not know (and the Office Action does not allege) the element of a “means for processing data that corresponds to the one or more *images of the object*” as recited in claim 25. Thus, the proposed combination of *Marrin* and the alleged knowledge of one skilled in the art fails to establish a *prima facie* case of obviousness, and the rejection of claim 25 should be withdrawn for at least this reason alone.

Claim 25 also recites that the “means for emitting light is configured to be portable” and the means for “forming the one or more images of the object is “configured to be portable.” However, as to these limitations, the Office Action alleges “it would

have been obvious to one of ordinary skill in the art at the time the invention was made to *Marrin, et al.*, since it has been held that making a device portable or movable without producing any new modification and function or manufacture involves only ordinary skill in the art.” (Office Action, page 5). Without acquiescing to this argument, Applicants submit that claim 25 is patentable for reasons other than the alleged obviousness of the portability.

Accordingly, Applicants respectfully submit that independent claim 25 is allowable over the proposed combination of *Marrin* and the knowledge of one skilled in the art, and furthermore, that dependent claims 26-31 are allowable for at least the reason that they depend from allowable independent claim 25.

Dependent Claims 2 – 4, 6 – 15, 17 – 19, 21 – 24, 26 – 28, and 30 – 31

The Office Action rejects dependent claims 2 – 4, 6 – 15, 17 – 19, 21 – 24, 26 – 28 and 30 – 31 under 35 U.S.C. § 103(a) as allegedly obvious over *Marrin*. Without acquiescing to this argument, Applicants submit that this rejection is rendered moot in light of any other arguments made above and, therefore, the claims are allowable as a matter of law for at least the reason that claims 2 – 4, 6 – 15, 17 – 19, 21 – 24, 26 – 28 and 30 – 31 contain all the features and elements of their corresponding independent claim which Applicants believe to be allowable. For at least this reason, Applicants request that the rejection of claims 2 – 4, 6 – 15, 17 – 19, 21 – 24, 26 – 28 and 30 – 31 be withdrawn.

VI. Prior Art Made of Record

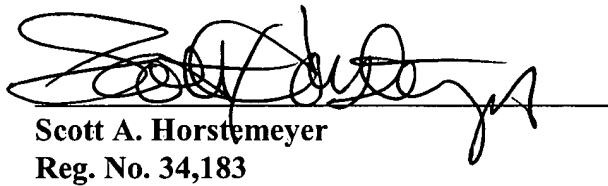
The prior art made of record has been considered, but is not believed to affect the patentability of the presently pending claims.

CONCLUSION

The Applicants respectfully submit that all claims are now in condition for allowance, and request that the Examiner pass this case to issuance. If, in the opinion of the Examiner, a telephonic conference would expedite the examination of this matter, the Examiner is invited to call the undersigned attorney at (770) 933-9500.

No fee is believed to be due in connection with this response. If, however, any fee is deemed to be payable, you are hereby authorized to charge any such fee to Deposit Account No. 20-0778.

Respectfully submitted,



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